GEC Project No. 1717-2030

RELEASE ABATEMENT MEASURE (RAM) PLAN

BOOTT MILLS
130 FOOT of JOHN STREET
LOWELL, MASSACHUSETTS
MADEP RTN: 3-26688

August 2, 2012

Prepared For:
Boott Properties, LLC
72 Sumner Street
Milford, MA 01757

Submitted to:
Massachusetts Department of Environmental Protection
Northeast Regional Office
205 B Lowell Street
Wilmington, Massachusetts 01887

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1.0 INTRODUCTION

Goldman Environmental Consultants, Inc. (GEC) on behalf of Boott Properties, LLC, the property owner, submits the following Release Abatement Measure (RAM) Plan for the release of oil and hazardous materials (OHM) to soil located at 130 Foot of John Street in Lowell, Massachusetts. GEC intends to conduct response actions at the Site in order to satisfy applicable regulations and guidelines promulgated by both the Massachusetts Department of Environmental Protection (MADEP) and the United States Environmental Protection Agency (EPA). This RAM Plan is being prepared in accordance with the Massachusetts Contingency Plan (MCP) (310 CMR 40.0000), and specifically 310 CMR 40.0444. In addition this Plan and proposed scope of work take into account applicable requirements of the "self-implementing procedure" for the clean-up of polychlorinated biphenyls (PCB) contamination as described by the USEPA under the Toxic Substances Control Act (TSCA) and specifically in the PCB regulations at 40 CFR 761. Any information or action required under the self-implementing procedure (40 CFR 761.61) not directly or adequately included in this RAM Plan will be addressed and provided separately in writing to the USEPA.

The person assuming responsibility for conducting this RAM is:

Boott Properties, LLC (Property Owner)
c/o Anthony Consigli
72 Sumner Street
Milford, MA 01757
Phone: (508) 473-2580

This RAM Plan has three general objectives: (1) conduct additional subsurface investigations within the eastern courtyard of the Site to address data gaps and more accurately determine the horizontal and vertical extent of PCB and lead contamination (2) conduct soil removal activities, if appropriate, to reduce the concentration of PCB and lead in soils to applicable MCP and TSCA standards; and (3) properly dispose of contaminated soils in accordance with applicable state and federal requirements.

2.0 SITE CONDITIONS AND SURROUNDING RECEPTORS

A detailed description of the Site conditions and surrounding receptors can be found in the *Phase I Initial Site Investigation (ISI) Report* prepared by GEC and dated April 11, 2012 for RTNs 3-26688 & 3-30667. Pertinent information obtained from the report is provided below.

The property is located at 130 Foot of John Street and consists of a 1.7-acre parcel that is occupied by three adjoining mill buildings identified as Mill buildings 3, 4, and 5. The longitude and latitude of 130 Foot of John Street, Lowell, MA are 42°38'54" north and 71°18'29" east/west. The Universal Transverse Mercator (UTM) coordinates are 310807 meters east and 4724354 meters north. Currently the property buildings contain 39 occupied residential condo units, 6,000 square feet of occupied commercial space, 10,000 square feet of unoccupied, finished commercial space, and 164,000 square feet of vacant, "raw" mill space. The current usage of the surrounding Mill buildings is mixed usage consisting of residential, office, commercial, museum and empty space

To the extent that the disposal site boundaries have currently been defined, the disposal site boundary extends slightly beyond both courtyard areas. The Site Locus is provided as Figure 1. The MADEP Site Scoring Map, showing 500-foot and ½-mile radii, is provided as Figure 2. The Site Plan is provided as Figure 3.

No schools or day cares are known to be located within 500 feet of the property.

Institutions are defined at 310 CMR 40.0006 as any publicly or privately owned hospital, health care facility, orphanage, nursing home, convalescent home, educational facility or correctional facility, where such facility in whole or in part provides overnight housing. No institutions are known to be located within 500 feet of the property.

Natural resource areas include: (1) all surface waters, including wetlands, vernal pools, ponds, lakes, streams, rivers and reservoirs; (2) drinking water supplies consisting of Zone II areas, Interim Wellhead Protection Areas, Zone A areas, Potentially Productive Aquifers, and private wells; (3) Areas of Critical Environmental Concern (ACEC); (4) Sole Source Aquifers; (5) local, state and/or federal protected open space; (6) fish habitats; and (7) habitats of Species of Special Concern or Threatened or Endangered Species.

The Merrimack River abuts the property to the north and the Merrimack Canal abuts the property to the west. Other canals located within ½-mile of the disposal site include, the Northern Canal, the Hamilton Canal, and the Eastern Canal. The Concord River is located approximately ½-mile southeast of the disposal site.

The Merrimack River generally flows from northwest to southeast in the vicinity of the property. In the vicinity of the disposal site, the Merrimack River is a Class B (Warm Water, Treated Water Supply, CSO) water body according to the Massachusetts Surface Water Quality Standards [314 CMR 4.00] for unlisted waters. Class B water bodies are designated as a habitat

for fish, other aquatic life and wildlife, and for primary and secondary contact recreation. Class B (Warm Water) water bodies are subject to dissolved oxygen and temperature criteria for warm water fisheries. Class B (Treated Water Supply) water bodies denotes those Class B waters that are used as a source of public water supply after appropriate treatment. Class B (CSO) water bodies occasionally are subject to short-term impairment of swimming or other recreational uses due to untreated combined sewer overflow discharges in a typical year, and the aquatic life community may suffer adverse impact yet is still generally viable.

Based on a review of the MADEP Site Scoring Map (Figure 2), the disposal site is located within a 100-year flood plain. Other 100-year flood plains are located within ½-mile of the disposal site along the Merrimack River, the Eastern Canal, the Hamilton Canal and the Concord River. A Natural Heritage and Endangered Species Program (NHESP) estimated rare wetland habitat is located in the portion of the Merrimack River that abuts the property. Protected Open Spaces are located approximately 500-feet southeast, 500-feet north, ¼-mile southwest, ¼-mile southeast, ½-mile west, ½-mile southwest, ½-mile east and ½-mile north of the property.

The property and surrounding areas are serviced by the municipal potable water supply. Based on the MADEP Site scoring map, the property is not located within a potential or actual drinking water source area. No private water supply wells are located nearby.

3.0 PRIOR SITE ACTIVITES

Based on the RAM Completion Report prepared by Environmental Compliance Services, Inc. (ECS), dated January 29, 2008, a release of PCBs was discovered in the exterior (eastern) courtyard by TRC Solutions, Inc. of Lowell, MA in November 2006. ECS, submitted a RAM Plan to the MADEP on December 8, 2006, that provided details on the planned excavation of PCB-contaminated soils. The presence of PCBs in soils at a concentration (22.73 mg/kg) greater than the applicable Reportable Concentration RCS-1 (2 mg/kg) was reported to the MADEP as a 120-day reportable condition on March 20, 2007. The PCB release condition was assigned RTN 3-26688.

Soil excavation was conducted on March 29 and 30, 2007 under the December 2006 RAM Plan. Excavated soils were directly loaded onto trucks and transported to Turnkey Landfill in Rochester, New Hampshire. A total of 209 tons of soil was transported off-site for disposal. On April 5, 2007, nine soil samples were collected from the sidewalls and bottom of the excavation for confirmatory analysis. PCB levels ranged from none detected above reportable detection limits to 6.15 mg/kg. PCBs, polycyclic aromatic hydrocarbons (PAHs) and lead were

detected at levels above Method 1 S-1 standards. No separate release notification appears to have occurred for the PAHs and lead. On April 30, 2007, the excavation was backfilled with clean soils and gravel. ECS submitted a RAM Completion Report to the MADEP on January 29, 2008, on behalf of Boott Cotton Mill Development Corporation. A stormwater management system was installed in the excavated area subsequent to the RAM. Presumably no RAM Plan was needed because the work was done within the clean backfill.

The activities described above were conducted prior to GEC's involvement at the site, and under the direction previous ownership. To the best of our knowledge the USEPA was not notified of the PCB release, provided a copy of the RAM Plan prior to conducting RAM activities, or provided a copy of the RAM Completion Report. GEC is providing the USEPA with a copy of this RAM Plan, 30-days prior to conducting any additional remedial actions at the disposal site.

In February 2010 Goldman Environmental Consultants, Inc. (GEC) was contracted by an entity interested in purchasing the property to conduct a due diligence Phase I Environmental Site Assessment (ESA) for the property. Subsequently, in June and September, 2011, due diligence subsurface investigations were conducted by GEC to evaluate the extent and magnitude of contamination across the disposal site. Subsurface investigations included: the advancement of thirteen test borings within both the exterior and enclosed courtyards, with seven completed as groundwater monitoring wells; the collection of soil samples from all thirteen borings; the collection of groundwater samples from the recently installed monitoring wells; the installation of two permanent soil vapor points (SVPs); and the collection of soil vapor samples from both SVPs. Soil and groundwater samples were submitted under chain of custody to either Groundwater Analytical, Inc. (GWA) of Buzzards Bay, Massachusetts, Con-Test Analytical Laboratory (Con-Test) of East Longmeadow, Massachusetts, or Alpha Analytical, Inc. (Alpha) of Westborough, Massachusetts for laboratory analysis. GWA was a state-certified laboratory at the time of the June 2011 sampling, but currently is no longer in business. As a result the September 2011 samples were sent to Con-Test or Alpha; both labs are state-certified laboratories. Refer to Figures 3, 3A and 3B for Site Plans depicting test boring and monitoring well locations.

GEC's subsurface investigation within the exterior courtyard found evidence of residual PCB contamination in soil above the applicable MADEP Method 1 S-1 Standard (2 mg/kg), with one soil sample containing PCB (124 mg/kg) at a level exceeding the upper concentration limit (UCL) (100 mg/kg). Elevated levels of PCB contamination persists in both shallow soils and in soils at depths to 10-15 feet below ground surface adjacent to the north central portion of the courtyard (south wall of the renovated portion of Mill building 5). Additionally, shallow soils in

the southwest corner and eastern portion of the courtyard are impacted with elevated concentrations of PCBs. The full extent of PCB contamination in soils at the disposal site is not known at this time, including whether the contamination extends beneath Mill buildings 3 or 5.

No PCBs were detected in any of the groundwater samples collected for dissolved PCB analysis. In addition, little or no VPH or VOCs were detected in the groundwater samples. Based on these results, PCBs, VOCs, and VPH in groundwater is not a significant issue. Insufficient VOCs and VPH are present in groundwater to result in the co-solution of PCBs in groundwater. Refer to Tables 1.1 through 1.5 for a summary of groundwater data.

For the exterior courtyard, concentrations of lead in shallow soils (0-3 feet) collected from borings B-10, B-11, and B-12 exceed the MADEP's background concentrations for soils associated with fill containing coal ash or wood ash. The levels of lead also exceed the Method 1 S-1 soil standards.

For monitoring well GEC-1, located in the exterior courtyard, total lead was detected (71 ug/l) above its Method 1 GW-3 standard (10 ug/l) in the sample collected on September 7, 2011. Yet, no dissolved lead was detected in the filtered sample collected at the same time from GEC-1, thereby suggesting that lead is adsorbed to soil particles and is not mobilized within the water column.

GEC's investigation in the exterior courtyard also found elevated levels of the following PAH above their MADEP-published background concentrations and Method 1 S-1 soil standards: benzo[a]anthracene, benzo[b]fluoranthene, benzo[a]pyrene and dibenzo[a,h]anthracene. These exceedences were detected in samples obtained from soil recoveries that contained fly ash, coal, gasified coal and / or coal ash. The presence of PAHs is due at least in part to the presence of coal ash in the soils, which is a background condition; however, the transformer oil release may have contributed to the presence of PAHs in soils.

Chromium was detected in one soil sample and nickel in two soil samples at levels greater than their Method 1 S-1 standards and slightly greater than background concentrations. The presence of chromium and nickel may be attributable to the observed presence of coal ash, fly ash and coal in the fill, and/or to historic industrial operations at the subject property.

GEC's investigation within the enclosed courtyard found no evidence of PCB contamination, though there were relatively low levels of PAHs and metals detected in at least one sample. Lead was detected at higher concentrations, and it was detected in all soil samples submitted for analysis. Again, GEC documented the presence of brick, coal, and coal ash in

soils. Except for lead, the metal and PAH concentrations may be attributed to a background condition and not a separate release. Historic industrial operations may have also contributed to the presence of some of the PAHs and metals. Refer to Tables 2.1 through 2.3 for a summary of soil analytical data.

No additional work has been conducted at the Site since the April 2012 Phase I ISI Report was submitted to the MADEP.

4.0 RAM OBJECTIVES

This RAM Plan has three general objectives: (1) conduct additional subsurface investigations within the eastern courtyard of the Site to address data gaps and more accurately determine the horizontal and vertical extent of PCB and lead contamination (2) conduct soil removal activities, if appropriate, to reduce the concentration of PCB and lead in soils to applicable MCP and TSCA standards; and (3) properly dispose of contaminated soils in accordance with applicable state and federal requirements.

4.1 Additional Subsurface Investigations

Additional subsurface investigations are needed to determine the horizontal and vertical extent of contamination at the Site. Activities to delineate the extents of PCB contamination in soils will include the advancement of approximately 18 shallow test borings within or adjacent to the exterior courtyard and the collection of up to 47 soil samples for analysis of PCBs via the EPA 8082 Method. The shallow test borings will be distributed throughout the exterior courtyard and within the footprint of the Site buildings (Mill Buildings 3 and 5) depending on available access to the interior of the buildings and the location of underground utilities and structures beneath the courtyard. Select soil samples from the exterior courtyard will also be analyzed for lead, nickel and/or chromium via the EPA 6010 method in order to delineate areas where elevated concentrations were previously detected. Similarly, two shallow borings will be advanced within the interior courtyard adjacent the boring B-6A to delineate an area where elevated concentrations of lead were previously detected. Refer to Tables 3.1 and 3.2 for soil sampling plans and to Figures 3A and 3B for proposed sampling locations.

GEC will attempt to identify specific areas where soil removal will be necessary based on the additional analytical data. If the full extent of contamination is not delineated following the work described above, then additional investigations similar in scope may be necessary. Any additional work will be conducted in accordance with this RAM Plan.

4.2 Soil Removal Activities

The remediation of soils impacted by PCBs and lead associated with the reported release from a wall mounted transformer and historical use of the property for industrial purposes will involve the excavation of soils with concentrations of PCBs and/or lead at levels above applicable state or federal standards to the extent feasible. In an attempt to limit the amount of soil to be removed, and in accordance with the PCB regulations at 40 CFR 761.61, areas impacted by PCBs at a concentration of 10 mg/kg or above will be targeted for removal, while soils where concentrations are found to be 9 mg/kg or below may be left in place. Given that the Site is considered a "high occupancy area," this approach assumes that following the remedial excavation a cap will be installed over the release area. Furthermore, GEC acknowledges that this approach will likely leave soils in place with concentrations of PCBs at levels higher than the Method 1 standards. GEC assumes that levels of residual PCB contamination following removal activities will support the successful completion of a Method 3 Risk Assessment with a Level of No Significant Risk and the eventual implementation of an Activities and Use Limitation (AUL) on the Site.

If feasible, soils impacted with elevated levels of lead, nickel and chromium not within the limits of the excavations to mitigate PCBs will also be targeted for removal during excavation activities.

Contaminated soil, water or other material removed during RAM activities will be containerized and transported off-Site under a Hazardous Waste Manifest to be properly disposed of at an appropriate disposal facility in accordance with the TSCA and MCP. Waste characterization samples will be collected once the extent of contamination is determined to be used to determine the appropriate disposal facilities. Disposal facilities for excavated soils have not yet been identified given insufficient disposal criteria data. When waste characterization data is available GEC will select an appropriate receiving facility and obtain approval for each category of soil to be removed prior to the initiation of excavation activities.

4.4 Monitoring Plan

GEC will collect soil samples from the release area for the applicable disposal criteria analyses as required by the receiving facilities. Also, during the excavation of soils from the release area confirmatory soil samples will be collected for analysis of PCBs in accordance with 40 CFR 761.283, 761.286, and 761.289. At least five confirmatory samples from the sidewalls and bottom of each excavation area will also be collected for analysis of lead. Following the collection of confirmatory samples, the excavation hole will be backfilled with clean fill. Work

to construct a permanent cap over the release area and any residual contamination will be conducted concurrently or immediately following the remedial excavation. GEC will rely on the contractor to provide a competent person during any excavation activities.

4.5 Remediation Waste

At this time the full extent of PCBs, lead, chromium and nickel in soil is not known; however, based on current data a conservative estimate of the total volume of soil that will be removed is 1,000 cubic yards. Ultimately, the amount of soil removed will depend on the extent of contaminants as determined from the additional soil analytical data in addition to Site conditions encountered at the time of remediation (i.e. the available space to safely remove soil without compromising subsurface utilities, the structural integrity of building footings and the stormwater system located in the middle of the courtyard). Groundwater is not expected to be encountered during soil removal activities. Contaminated soils will be shipped off-site under a Hazardous Waste Manifest, in compliance with 310 CMR 40.0030.

4.6 Remedial Additives

The application of remedial additives is not anticipated.

5.0 REQUIRED PERMITS

This RAM is being conducted pursuant to the MCP [310 CMR 40.0440]. The local authorities have been or will be informed of the anticipated work, within 20 days prior to initiation. Refer to Attachment 1 for a copy of the public involvement letters. DigSafe and the local water and sewer departments will be notified by GEC to mark the location of utilities in the vicinity of the Site.

6.0 LISCENSED SITE PROFESSIONAL OPINION

This RAM Plan was prepared in accordance with 310 CMR 40.0444 and under the oversight of Brian T. Butler, LSP 5736, of Goldman Environmental Consultants, Inc.

310 CMR 40.0442(5) requires that in instances of excavation of greater than 1,500 cubic yards of remediation waste, a Licensed Site Professional provide certification of sufficient financial resources of the person conducting the response action. The RAM Plan does not anticipate the excavation of soil at that volume; therefore, the certification requirement does not apply.

7.0 PUBLIC INVOLVEMENT

Pursuant to 310 CMR 40.0447 and in accordance with 310 CMR 40.1403(3)(d), GEC will or has notified the City of Lowell Mayor's Office and the City of Lowell Health Department of Boot Properties, LLC's intent to initiate the RAM. The notification will have identified the purpose, nature and expected duration of the RAM Plan. Refer to Attachment 1 for the Public Notification letters.

8.0 IMPLEMENTATION SCHEDULE AND FEE

This RAM Plan will be initiated no sooner than 30 days of submittal to the MADEP and USEPA, and is expected to be completed within 90 days following the initiation of activities described in the Plan. The Site has undergone Tier Classification; therefore, no fee is required pursuant 310 CMR 40.0444(2)(a). The RAM Plan is being electronically submitted to MADEP attached to a BWSC106 Release Abatement Measure Transmittal Form. The RAM Plan will also be submitted to USEPA attached to a letter describing the planned implementation of remedial actions to address a release of PCBs under the self-implementation procedure.

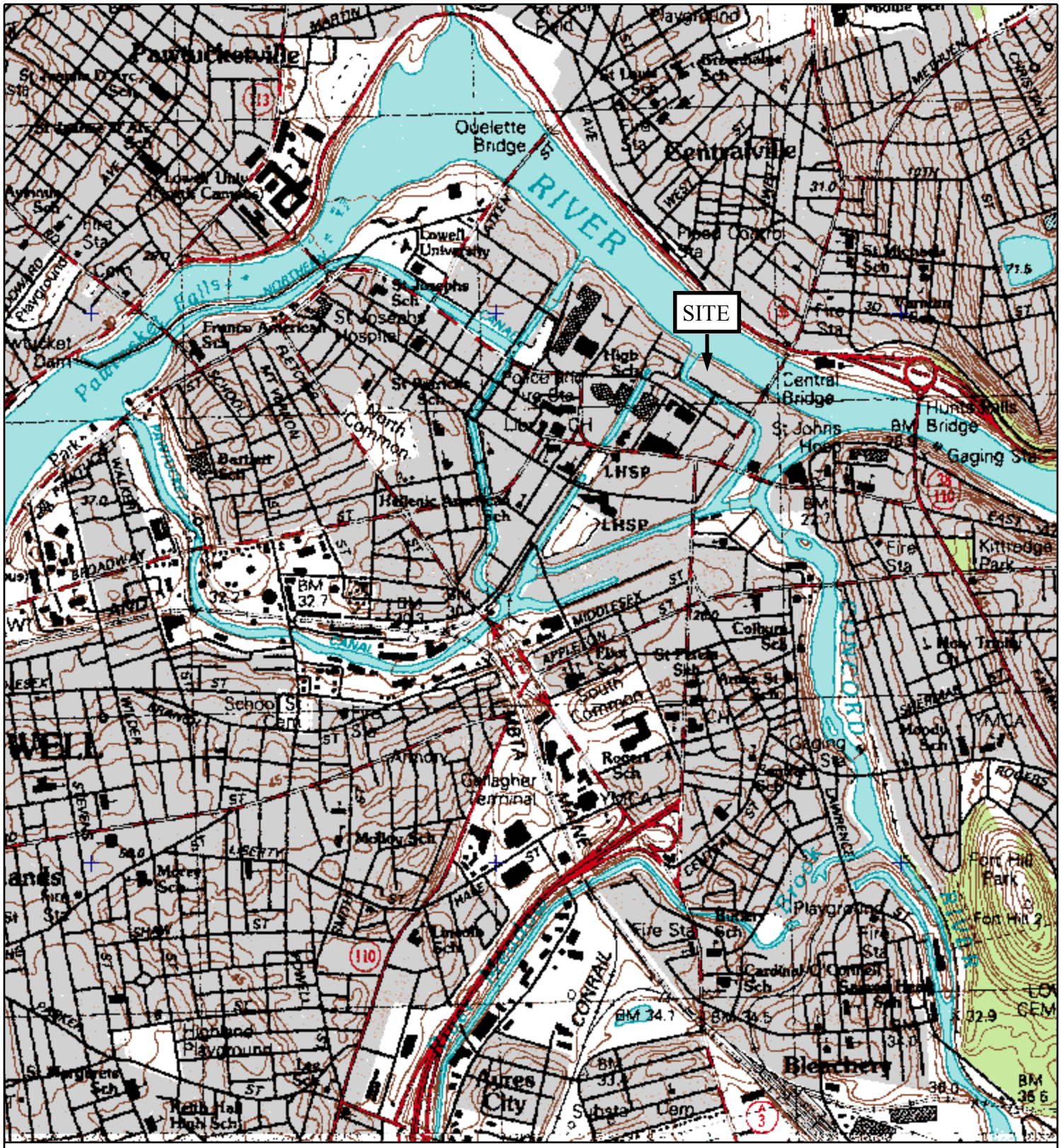
Respectfully submitted,
Goldman Environmental Consultants, Inc.

Matthew Wilson
Assistant Project Manager

Brian T. Butler, LSP
V. P., Waste Site Program

P:\Projects\1717 - Anthony Consigli\1717-2030 Boott Mills RAM Plan\Reports and Letters\RAM Plan FINAL.doc

FIGURES



USGS 7.5 Minute Topographic

Lowell
Massachusetts Quadrangle

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SITE LOCUS

Boott Mills
130 Foot of John Street,
Lowell, Massachusetts

GEC Project #: 1717-2030

Figure 1

Scale
1 : 25,000

N

MassDEP - Bureau of Waste Site Cleanup

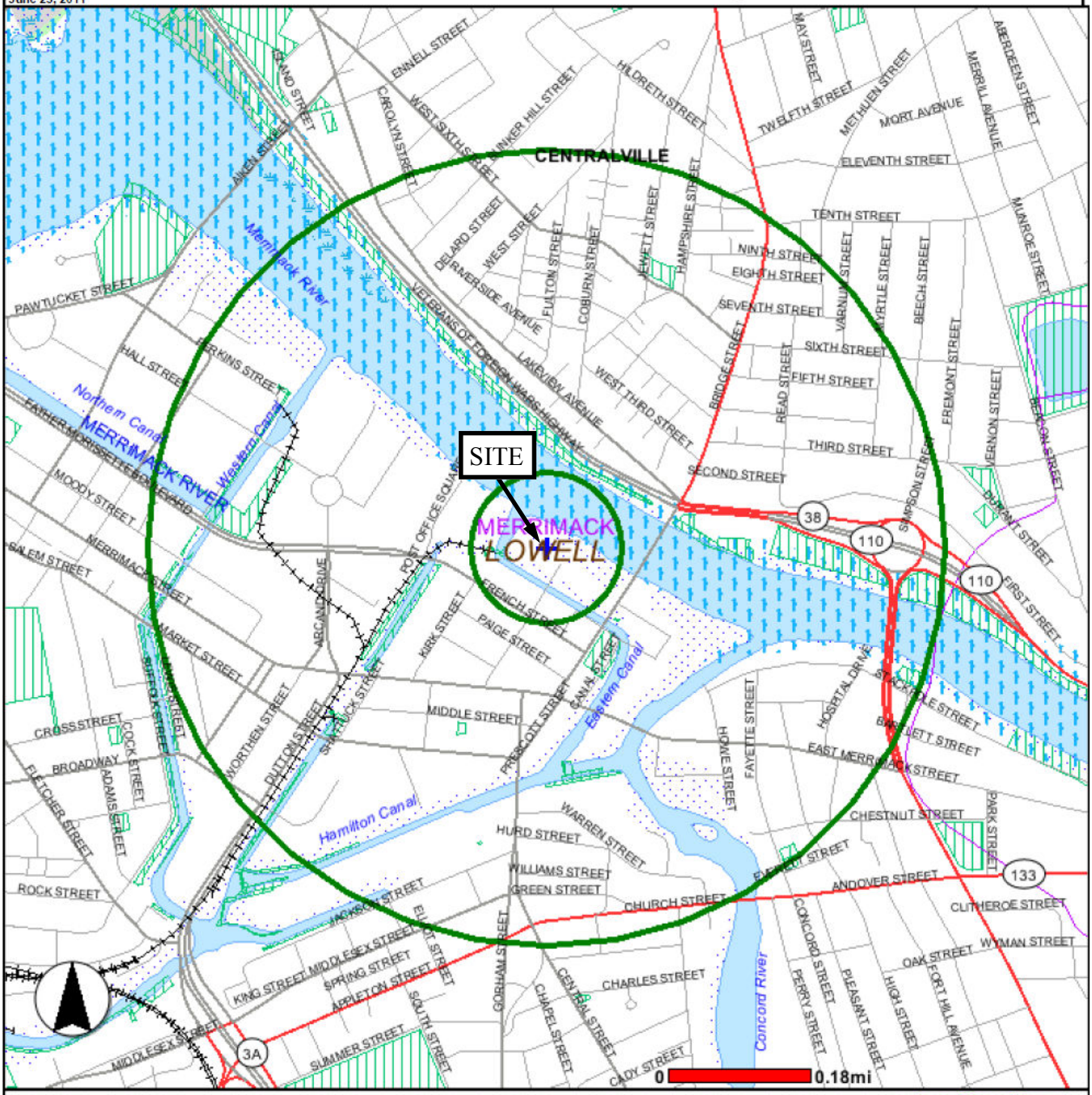
MCP Numerical Ranking System Map: 500 feet & 0.5 Mile Radii

Site Name:
Boott Mills Development
130 Foot of John Street
Lowell, MA
RTN:
NAD83 MA Coordinates:
215766mE, 933083mN

June 23, 2011

The information shown on this map is the best available at the date of printing. For more information please refer to www.mass.gov/mgis/massgis.htm

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail

Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct

Basins: Major, Sub; Streams: Perennial, Intermittent, Man Made Shore, Dam

Aquifers: Medium Yield, High Yield, EPA Sole Source

Non Potential Drinking Water Source Area: Medium, High (Yield)

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

NHESP: Est Rare Weland Habitat, Certified Vernal Pool

DEP Permitted Solid Waste Landfill

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Boott Mills
130 Foot of John Street
Lowell, MA

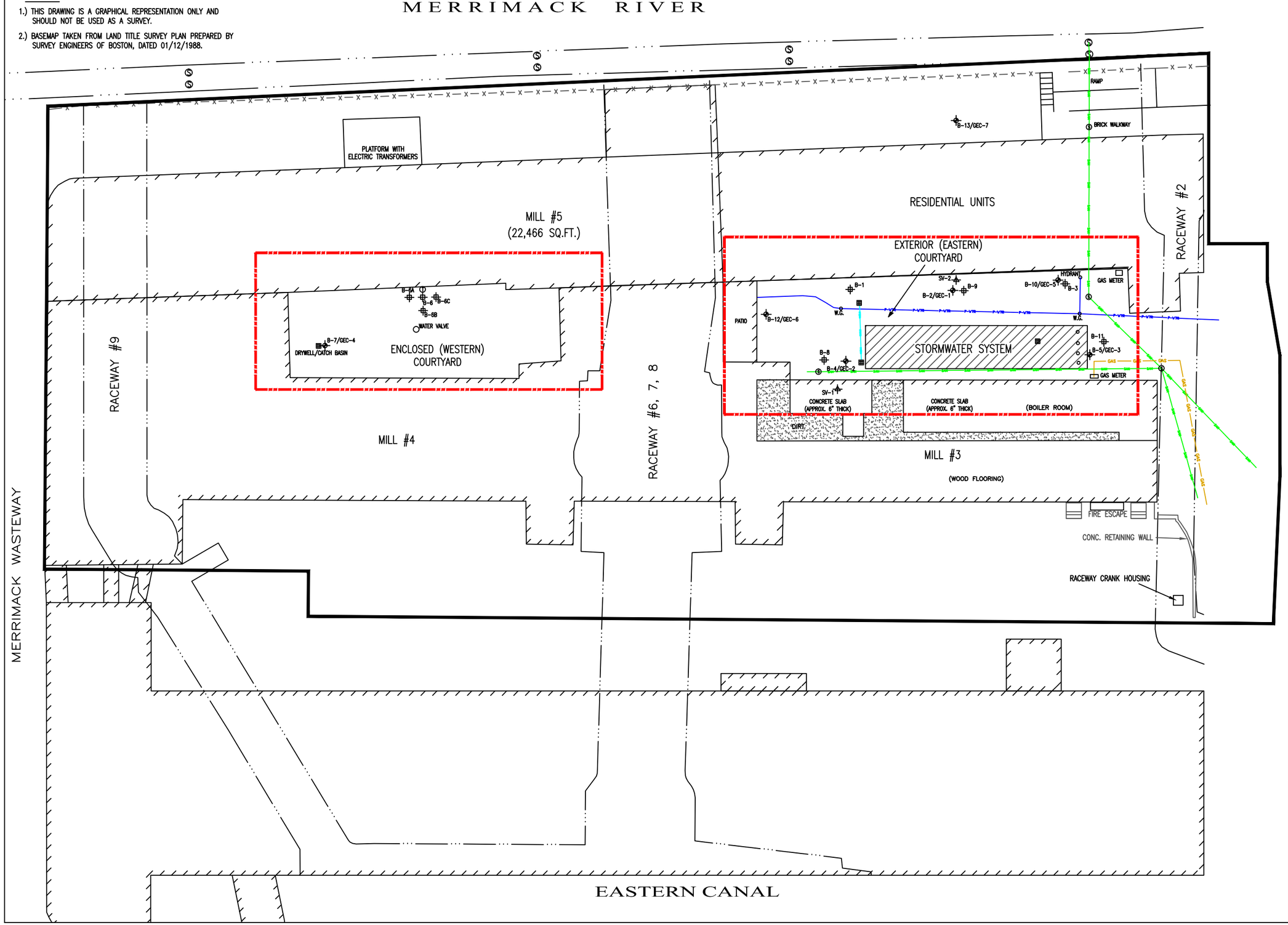
GEC Project #: 1717-2030

Figure 2

NOTES

1.) THIS DRAWING IS A GRAPHICAL REPRESENTATION ONLY AND SHOULD NOT BE USED AS A SURVEY.

2.) BASEMAP TAKEN FROM LAND TITLE SURVEY PLAN PREPARED BY SURVEY ENGINEERS OF BOSTON, DATED 01/12/1988.



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Legend

- Building
- Stone Wall
- Wood Fence
- Raceway
- Property Boundary
- Site Boundary
- Sanitary Line
- Storm Drain Line
- Gas Line
- Water Line
- Soil Boring/ Monitoring Well
- Soil Boring
- Catch Basin
- Wall–Mounted Transformer
- Soil Vapor Point

Site Plan

Boott Mills
130 John Street
Lowell, Massachusetts

GEC Project Number 1717-2040
GEC File Number 073012A

FIGURE 3

SCALE
0 20' 40'

N

NOTES

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2.) BASEMAP TAKEN FROM LAND TITLE SURVEY PLAN PREPARED BY SURVEY ENGINEERS OF BOSTON, DATED 01/12/1988.

RESIDENTIAL UNITS

EXTERIOR (EASTERN) COURTYARD

RACEWAY #2

RACEWAY #6, 7, 8

B-1

B-15

SV-2

B-9

B-2/GEC-1

B-16

B-17

HYDRANT

B-10/GEC-5

B-3

GAS METER

W.G.

PATIO

B-12/GEC-6

B-34

B-20

B-21

B-22

W.G.

B-23

B-11

B-33

STORMWATER SYSTEM

B-8

B-26

B-4/GEC-2

B-5/GEC-3

B-31

B-32

B-27

B-29

GAS METER

B-25

SV-1

CONCRETE SLAB (APPROX. 6" THICK)

B-28

CONCRETE SLAB (APPROX. 6" THICK)

(BOILER ROOM)

B-30

DIRT

MILL #3

(WOOD FLOORING)

FIRE ESCAPE

CONC. RETAINING WALL

RACEWAY CRANK HOUSING

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Legend

- Building
- Stone Wall
- Wood Fence
- Raceway
- Property Boundary
- Site Boundary
- Sanitary Line
- Storm Drain Line
- Gas Line
- Water Line
- Soil Boring/ Monitoring Well
- Soil Boring
- Catch Basin
- Wall–Mounted Transformer
- Soil Vapor Point
- Proposed Soil Boring

Site Plan
(Eastern Courtyard)
with Proposed Sampling Locations

Boott Mills
130 John Street
Lowell, Massachusetts

GEC Project Number 1717-2040
GEC File Number 073012A

FIGURE 3A

SCALE
0 10' 20'

N

NOTES

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2.) BASEMAP TAKEN FROM LAND TITLE SURVEY PLAN PREPARED BY SURVEY ENGINEERS OF BOSTON, DATED 01/12/1988.

PLATFORM WITH ELECTRIC TRANSFORMERS

MILL #5
(22,466 SQ.FT.)

B-6A
B-6D
B-6
B-6C
B-6E
B-6B
WATER VALVE
B-7/GEC-4
DRYWELL/CATCH BASIN
ENCLOSED (WESTERN) COURTYARD

RACEWAY #9

MILL #4

RACEWAY #6, 7, 8

PATI

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Legend

- Building
- Stone Wall
- Wood Fence
- Raceway
- Property Boundary
- Site Boundary
- Sanitary Line
- Storm Drain Line
- Gas Line
- Water Line
- Soil Boring/ Monitoring Well
- Soil Boring
- Catch Basin
- Wall–Mounted Transformer
- Soil Vapor Point
- Proposed Soil Boring

Site Plan
(Western Courtyard)
with Proposed Sampling Locations

Boott Mills
130 John Street
Lowell, Massachusetts

GEC Project Number 1717-2040
GEC File Number 073012A

FIGURE 3B

SCALE
0 10' 20'

N

TABLES

TABLE 1.1
SUMMARY OF GROUNDWATER ANALYTICAL DATA:
MADEP EPH AND VPH
BOOTT MILLS
130 Foot of John Street, Lowell, MA

(unit, parts per billion [ppb], ug/L)

Sample Identification	Sample Date	Analytical Method	n-C19 to n-C36 Aliphatic Hydrocarbons	RDL	n-C11 to n-C22 Aromatic Hydrocarbons	RDL
GEC-1	06/15/2011	MA DEP EPH	190	110	160	110
GEC-2	06/15/2011	MA DEP EPH	150	110	130	110
GEC-3	06/15/2011	MA DEP EPH	BRL	110	BRL	110
GEC-4	06/15/2011	MA DEP EPH	BRL	120	BRL	120
Selected Groundwater Standards						
		MA RCGW-2	50,000		5,000	
		MA GW-2	NA		50,000	
		MA GW-3	50,000		5,000	

Notes:

RDL = Reported Detection Limit

BRL = Below Reporting Limit

NA = Not Analyzed

Bold = Exceeds One or More Selected Standards

- On 9/12/2011, groundwater samples were collected from GEC-2 and GEC-6 for analysis of VPH via MADEP's Method. No VPH constituents were detected in either sample.
- On 9/7/2011, a groundwater sample was collected from GEC-1 for analysis of VPH via MADEP's Method; however due to the closure of the original receiving laboratory the sample was lost during the transfer of samples to Alpha Analytical. No VPH data from GEC-1 is available.

Prepared By: MDW
Reviewed By:
Revision Date: 4/9/2012

TABLE 1.2
SUMMARY OF GROUNDWATER ANALYTICAL DATA:
PAHs
BOOTT MILLS
130 Foot of John Street, Lowell, MA

(unit, parts per billion [ppb], ug/L)

Sample Identification	Sample Date	Analytical Method	Phenanthrene	RDL	Fluoranthene	RDL	Pyrene	RDL	Benzo[a]anthracene	RDL	Chrysene	RDL
GEC-1	06/15/2011	EPA 8270C Mod	1.1	0.60	2.1	0.60	2.0	0.60	1.0	0.10	0.90	0.10
	9/7/2011	EPA 8270C Mod	BRL	0.20	0.25	0.20	0.24	0.20	BRL	0.20	BRL	0.20
	9/7/2011 *	EPA 8270C Mod	BRL	0.20	BRL	0.20	BRL	0.20	BRL	0.20	BRL	0.20
GEC-2	06/15/2011	EPA 8270C Mod	BRL	0.60	1.3	0.60	1.2	0.60	0.70	0.10	0.60	0.10
	09/12/2011	EPA 8270C Mod	BRL	5	BRL	5	BRL	5	BRL	5	BRL	5
	9/12/2011 *	EPA 8270C Mod	BRL	5	BRL	5	BRL	5	BRL	5	BRL	5
GEC-3	06/15/2011	EPA 8270C Mod	BRL	0.60	BRL	0.60	BRL	0.60	0.20	0.10	0.20	0.10
GEC-4	06/15/2011	EPA 8270C Mod	BRL	0.60	BRL	0.60	BRL	0.60	BRL	0.10	BRL	0.10
Selected Groundwater Standards and Guidance												
		MA RCGW-2	10,000		200		20		1,000		70	
		MA GW-2	NA		NA		NA		NA		NA	
		MA GW-3	10,000		200		20		1,000		70	

Notes:

RDL = Reported Detection Limit

BRL = Below Reporting Limit

NA = Not Analyzed

Bold = Exceeds One or More Selected Standards

* = A sample of groundwater from GEC-1 and from GEC-2 was filtered prior to analysis via EPA 8270C.

- Surface Water Benchmark values were from MADEP's spreadworks used to derive Method 1 GW-3 Standards

Prepared By: MDW
Reviewed By:
Revision Date: 4/9/2012

TABLE 1.2
SUMMARY OF GROUNDWATER ANALYTICAL DATA:
PAHs
BOOTT MILLS
130 Foot of John Street, Lowell, MA

(unit, parts per billion [ppb], ug/L)

Sample Identification	Sample Date	Analytical Method	Benzo[b]fluoranthene	RDL	Benzo[k]fluoranthene	RDL	Benzo[a]pyrene	RDL	Indeno[1,2,3-c,d]pyrene	RDL
GEC-1	06/15/2011	EPA 8270C Mod	1.3	0.10	0.50	0.10	1.1	0.10	0.90	0.10
	9/7/2011	EPA 8270C Mod	0.27	0.20	BRL	0.20	0.28	0.20	0.37	0.20
	9/7/2011 *	EPA 8270C Mod	BRL	0.20	BRL	0.20	BRL	0.20	BRL	0.20
GEC-2	06/15/2011	EPA 8270C Mod	0.90	0.10	0.40	0.10	0.80	0.10	0.60	0.10
	09/12/2011	EPA 8270C Mod	BRL	5	BRL	5	BRL	5	BRL	5
	9/12/2011 *	EPA 8270C Mod	BRL	5	BRL	5	BRL	5	BRL	5
GEC-3	06/15/2011	EPA 8270C Mod	0.30	0.10	0.20	0.10	0.30	0.10	0.20	0.10
GEC-4	06/15/2011	EPA 8270C Mod	BRL	0.10	BRL	0.10	BRL	0.10	BRL	0.10
Selected Groundwater Standards and Guidance										
		MA RCGW-2	400		100		500		100	
		MA GW-2	NA		NA		NA		NA	
		MA GW-3	400		100		500		100	

Notes:

RDL = Reported Detection Limit

BRL = Below Reporting Limit

NA = Not Analyzed

Bold = Exceeds One or More Selected Standards

* = A sample of groundwater from GEC-1 and from GEC-2 was filtered prior to analysis via EPA 8270C.

- Surface Water Benchmark values were from MADEP's spreadworks used to derive Method 1 GW-3 Standards

Prepared By: MDW
Reviewed By:
Revision Date: 4/9/2012

TABLE 1.2
SUMMARY OF GROUNDWATER ANALYTICAL DATA:
PAHs
BOOTT MILLS
130 Foot of John Street, Lowell, MA

(unit, parts per billion [ppb], ug/L)

Sample Identification	Sample Date	Analytical Method	Dibenzo[a,h]anthracene	RDL	Benzo[g,h,i]perylene	RDL
GEC-1	06/15/2011	EPA 8270C Mod	0.20	0.10	0.70	0.10
	9/7/2011	EPA 8270C Mod	BRL	0.20	0.36	0.20
	9/7/2011 *	EPA 8270C Mod	BRL	0.20	BRL	0.20
GEC-2	06/15/2011	EPA 8270C Mod	0.10	0.10	0.50	0.10
	09/12/2011	EPA 8270C Mod	BRL	5	BRL	5
	9/12/2011 *	EPA 8270C Mod	BRL	5	BRL	5
GEC-3	06/15/2011	EPA 8270C Mod	BRL	0.10	0.20	0.10
GEC-4	06/15/2011	EPA 8270C Mod	BRL	0.10	BRL	0.10
Selected Groundwater Standards and Guidance						
		MA RCGW-2	40		20	
		MA GW-2	NA		NA	
		MA GW-3	40		20	

Notes:

RDL = Reported Detection Limit

BRL = Below Reporting Limit

NA = Not Analyzed

Bold = Exceeds One or More Selected Standards

* = A sample of groundwater from GEC-1 and from GEC-2 was filtered prior to analysis via EPA 8270C.

- Surface Water Benchmark values were from MADEP's spreadworks used to derive Method 1 GW-3 Standards.

Prepared By: MDW
Reviewed By:
Revision Date: 4/9/2012

TABLE 1.3
SUMMARY OF GROUNDWATER ANALYTICAL DATA:
TRACE METALS
BOOT MILLS
130 Foot of John Street, Lowell, MA

(unit, parts per billion [ppb], ug/L)

Sample Identification	Sample Date	Analytical Method	Barium, Dissolved	RDL	Lead, Dissolved	RDL	Lead, Total	RDL	Hardness (mg/l)	RDL
GEC-1	6/15/2011	EPA 6010B	100	50	**12**	5.0	NA		NA	
	9/7/2011	EPA 6010B / SM18-20 2340B	NA		BRL	10	71	10.00	120	0.66
GEC-2	06/15/2011	EPA 6010B	BRL	50	BRL	5.0	NA		NA	
GEC-3	06/15/2011	EPA 6010B	BRL	50	BRL	5.0	NA		NA	
GEC-4	06/15/2011	EPA 6010B	BRL	50	BRL	5.0	NA		NA	
GEC-6	09/12/2011	EPA 6010B / SM18-20 2340B	NA		BRL	10	BRL	10	230	3.0
Selected Groundwater Standards										
		MA RCGW-2	50,000		10		10		10	
		MA GW-2	NS		NS		NS			
		MA GW-3	50,000		10		10			

Notes:

RDL = Reported Detection Limit

BRL = Below Reporting Limit

NA = Not Analyzed

NS = No applicable Standard

Bold = Exceeds One or More Selected Standards

- On 6/15/2011 GEC-1 and GEC-2 were sampled using bailers and could not be filtered in the field. Samples were filtered by the laboratory prior to preservation. GEC-3 and GEC-4 were field filtered prior to preservation.

- The Sept. 2011 samples from GEC-1 and GEC-6 were field filtered prior to preservation.

Prepared By: MDW
Reviewed By:
Revision Date: 4/9/2012

TABLE 1.4
SUMMARY OF GROUNDWATER ANALYTICAL DATA:
POLYCHORINATED BIPHENYLS
BOOTT MILLS
130 Foot of John Street, Lowell, MA

(unit, parts per billion [ppb], ug/L)

Sample Identification	Sample Date	Analytical Method	Aroclor 1248	RDL	Aroclor 1254	RDL	Total PCBs [1]	RDL
GEC-1	06/15/2011	EPA 8082	3.5	0.20	1.6	0.20	**5.1**	0.20
	9/7/2011	EPA 8082	BRL	0.25	0.43	0.25	BRL	0.25
	9/7/2011 *	EPA 8082	BRL	0.25	BRL	0.25	BRL	0.25
GEC-2	06/15/2011	EPA 8082	4.5	0.20	3.3	0.20	**7.8**	0.20
	09/12/2011	EPA 8082	BRL	0.20	BRL	0.20	BRL	0.20
	9/12/2011 *	EPA 8082	BRL	0.20	BRL	0.20	BRL	0.20
GEC-3	06/15/2011	EPA 8082	BRL	0.20	BRL	0.20	BRL	0.20
GEC-4	06/15/2011	EPA 8082	BRL	0.20	BRL	0.20	BRL	0.20
GEC-6	09/12/2011	EPA 8082	BRL	0.20	BRL	0.20	BRL	0.20
GEC-7	09/12/2011	EPA 8082	BRL	0.20	BRL	0.20	BRL	0.20
Selected Groundwater Standards								
		MA RCGW-2	5		5		5	
		MA GW-2	5		5		5	
		MA GW-3	10		10		10	

Notes:

RDL = Reported Detection Limit

BRL = Below Reporting Limit

NA = Not Analyzed

Bold = Exceeds One or More Selected Standards

1 = Total PCBs is a combination of separte aroclor compounds

* A sample of groundwater from GEC-1 and GEC-2 was filtered prior to analysis via EPA 8082.

Prepared By: MDW
Reviewed By:
Revision Date: 4/9/2012

TABLE 1.5
SUMMARY OF GROUNDWATER ANALYTICAL DATA:
VOLATILE ORGANIC COMPOUNDS
BOOT MILLS
130 Foot of John Street, Lowell, MA

(unit, parts per billion [ppb], ug/L)

Sample Identification	Sample Date	Analytical Method	Acetone	RDL
GEC-1	9/7/2011	EPA 8260B	BRL	5
GEC-2	09/12/2011	EPA 8260B	BRL	10
GEC-4	06/15/2011	EPA 8260B	BRL	10
GEC-6	09/12/2011	EPA 8260B	BRL	10
GEC-7	09/12/2011	EPA 8260B	11	10
Selected Groundwater Standards				
MA RCGW-2			10	
MA GW-2			50,000	
MA GW-3			50,000	

Notes:

. = Reported Detection Limit

L = Below Reporting Limit

NA = Not Analyzed

eds One or More Selected Standards

Prepared By: MDW
Reviewed By:
Revision Date: 4/9/2012

TABLE 2.1
SUMMARY OF SOIL ANALYTICAL DATA:
MADEP EPH
BOOTT MILLS
130 Foot of John Street, Lowell, MA
(unit, parts per million [ppm], mg/Kg)

Sample Identification	Sample Date	Analytical Method	n-C19 to n-C36 Aliphatic Hydrocarbons	RDL	n-C11 to n-C22 Aromatic Hydrocarbons	RDL	Phenanthrene	RDL	Acenaphthene	RDL	Fluorene	RDL	Anthracene	RDL
Exterior Courtyard Samples														
B-1 1-5'	06/06/2011	MA DEP EPH	210	20	150	20	1.9	0.5	BRL	0.5	BRL	0.5	0.6	0.5
B-1 10-15'	06/06/2011	MA DEP EPH	29	25	BRL	25	BRL	0.62	BRL	0.62	BRL	0.62	BRL	0.62
B-2 1-5'	06/06/2011	MA DEP EPH	160	22	200	22	8.4	0.54	0.70	0.54	0.85	0.54	2.3	0.54
B-2 10-15'	06/06/2011	MA DEP EPH	69	22	38	22	BRL	0.56	BRL	0.56	BRL	0.56	BRL	0.56
B-3 5-10'	06/06/2011	MA DEP EPH	30	24	BRL	24	BRL	0.6	BRL	0.6	BRL	0.6	BRL	0.6
B-4 12-15'	06/06/2011	MA DEP EPH	BRL	23	BRL	23	BRL	0.58	BRL	0.58	BRL	0.58	BRL	0.58
B-4 2-5'	06/06/2011	MA DEP EPH	610	23	560	110	17	2.8	BRL	2.8	BRL	2.8	4.5	2.8
B-5 10-15'	06/06/2011	MA DEP EPH	BRL	25	BRL	25	BRL	0.63	BRL	0.63	BRL	0.63	BRL	0.63
B-8 0-3'	09/01/2011	EPA 8270C	NA		NA		BRL	0.22	BRL	0.30	BRL	0.38	BRL	0.22
B-8 5-10'	09/01/2011	EPA 8270C	NA		NA		6.0	0.25	BRL	0.34	BRL	0.42	1.5	0.25
B-9 0-3'	09/01/2011	EPA 8270C/VOCs 5035	NA		NA		3.5	0.21	BRL	0.29	BRL	0.36	0.99	0.21
B-10 0-3'	09/01/2011	EPA 8270C	NA		NA		8.2	0.23	0.45	0.30	0.56	0.38	2.1	0.23
B-11 0-3'	09/01/2011	EPA 8270C	NA		NA		0.43	0.21	BRL	0.28	BRL	0.35	BRL	0.21
B-12 0-3'	09/01/2011	EPA 8270C	NA		NA		0.66	0.23	BRL	0.31	BRL	0.39	BRL	0.23
B-13 0-3'	09/01/2011	EPA 8270C	NA		NA		9.2	0.22	0.64	0.30	0.60	0.37	1.6	0.22
Enclosed Courtyard Samples														
B-6 0-4'	06/06/2011	MA DEP EPH	65	21	140	21	10	0.52	1.1	0.52	1	0.52	2.2	0.52
B-7 8-10'	06/06/2011	MA DEP EPH	BRL	24	BRL	24	BRL	0.61	BRL	0.61	BRL	0.61	BRL	0.61
Selected Soil Standards														
		MA RCS-1	3,000		1,000		10		4		1,000		1,000	
		MA RCS-2	5,000		3,000		1,000		3,000		3,000		3,000	
		MA S-1/GW-2	3,000		1,000		500		1,000		1,000		1,000	
		MA S-1/GW-3	3,000		1,000		500		1,000		1,000		1,000	
		MA S-2/GW-2	5,000		3,000		1,000		3,000		3,000		3,000	
		MA S-2/GW-3	5,000		3,000		1,000		3,000		3,000		3,000	
		MADEP Background - Urban Fill	-		-		20		2		2		4	

Notes:

RDL = Reported Detection Limit

BRL = Below Reporting Limit

NA = Not Analyzed

Bold = Exceeds background concentration and S-1/GW-2 or S-1/GW-3 standard

Prepared By: MDW
Reviewed By: EAF
Revision Date: 9/26/2011

TABLE 2.1
SUMMARY OF SOIL ANALYTICAL DATA:
MADEP EPH
BOOTT MILLS
130 Foot of John Street, Lowell, MA
(unit, parts per million [ppm], mg/Kg)

Sample Identification	Sample Date	Analytical Method	Acenaph-thylene	RDL	Naphthalene	RDL	2-Methyl-naphthalene	RDL	Fluoranthene	RDL	Pyrene	RDL	Benzo[a] anthracene	RDL	Chrysene	RDL
Exterior Courtyard Samples																
B-1 1-5'	06/06/2011	MA DEP EPH	BRL	0.5	BRL	0.5	BRL	0.5	3.2	0.5	3.0	0.5	1.7	0.5	2.0	0.5
B-1 10-15'	06/06/2011	MA DEP EPH	BRL	0.62	BRL	0.62	BRL	0.62	BRL	0.62	BRL	0.62	BRL	0.62	BRL	0.62
B-2 1-5'	06/06/2011	MA DEP EPH	BRL	0.54	BRL	0.54	BRL	0.54	12	0.54	11	0.54	5.9	0.54	6.6	0.54
B-2 10-15'	06/06/2011	MA DEP EPH	BRL	0.56	BRL	0.56	BRL	0.56	1.0	0.56	0.95	0.56	BRL	0.56	0.68	0.56
B-3 5-10'	06/06/2011	MA DEP EPH	BRL	0.6	BRL	0.6	BRL	0.6	BRL	0.6	BRL	0.6	BRL	0.6	BRL	0.6
B-4 12-15'	06/06/2011	MA DEP EPH	BRL	0.58	BRL	0.58	BRL	0.58	BRL	0.58	BRL	0.58	BRL	0.58	BRL	0.58
B-4 2-5'	06/06/2011	MA DEP EPH	BRL	2.8	BRL	2.8	BRL	2.8	24	2.8	19	2.8	**9.8**	2.8	11	2.8
B-5 10-15'	06/06/2011	MA DEP EPH	BRL	0.63	BRL	0.63	BRL	0.63	BRL	0.63	BRL	0.63	BRL	0.63	BRL	0.63
B-8 0-3'	09/01/2011	EPA 8270C	BRL	0.30	BRL	0.38	BRL	0.45	BRL	0.22	BRL	0.22	BRL	0.22	BRL	0.22
B-8 5-10'	09/01/2011	EPA 8270C	1.1	0.34	0.47	0.42	BRL	0.50	14	0.25	12	0.25	**7.1**	0.25	6.4	0.25
B-9 0-3'	09/01/2011	EPA 8270C/VOCs 503	0.46	0.29	0.24	0.20	BRL	0.43	8.2	0.21	7.0	0.21	3.7	0.21	3.6	0.21
B-10 0-3'	09/01/2011	EPA 8270C	0.74	0.30	BRL	0.38	BRL	0.46	14	0.23	12	0.23	5.8	0.23	5.3	0.23
B-11 0-3'	09/01/2011	EPA 8270C	BRL	0.28	BRL	0.35	BRL	0.42	1.1	0.21	1.0	0.21	0.61	0.21	0.62	0.21
B-12 0-3'	09/01/2011	EPA 8270C	BRL	0.31	BRL	0.39	BRL	0.47	1.3	0.23	1.3	0.23	0.75	0.23	0.74	0.23
B-13 0-3'	09/01/2011	EPA 8270C	0.33	0.30	BRL	0.37	BRL	0.45	13	0.22	11	0.22	5.6	0.22	5.9	0.22
Enclosed Courtyard Samples																
B-6 0-4'	06/06/2011	MA DEP EPH	BRL	0.52	BRL	0.52	BRL	0.52	11	0.52	9.4	0.52	4.7	0.52	5.4	0.52
B-7 8-10'	06/06/2011	MA DEP EPH	BRL	0.61	BRL	0.61	BRL	0.61	BRL	0.61	BRL	0.61	BRL	0.61	BRL	0.61
Selected Soil Standards																
		MA RCS-1	1		4		0.7		1,000		1,000		7		70	
		MA RCS-2	10		40		80		3,000		3,000		40		400	
		MA S-1/GW-2	600		40		80		1,000		1,000		7		70	
		MA S-1/GW-3	10		500		300		1,000		1,000		7		70	
		MA S-2/GW-2	600		40		80		3,000		3,000		40		400	
		MA S-2/GW-3	10		1,000		500		3,000		3,000		40		400	
		MADEP Background - Urban Fill	1		1		1		10		20		9		7	

Notes:

RDL = Reported Detection Limit

BRL = Below Reporting Limit

NA = Not Analyzed

Prepared By: MDW
Reviewed By: EAF
Revision Date: 9/26/2011

TABLE 2.1
SUMMARY OF SOIL ANALYTICAL DATA:
MADEP EPH
BOOTT MILLS
130 Foot of John Street, Lowell, MA
(unit, parts per million [ppm], mg/Kg)

Sample Identification	Sample Date	Analytical Method	Benzo[b] fluoranthene	RDL	Benzo[k] fluoranthene	RDL	Benzo[a] pyrene	RDL	Indeno[1,2,3-c,d] pyrene	RDL	Dibenzo[a,h] anthracene	RDL	Benzo[g,h,i] perylene	RDL
Exterior Courtyard Samples														
B-1 1-5'	06/06/2011	MA DEP EPH	1.5	0.5	1.4	0.5	1.9	0.5	1.2	0.5	BRL	0.5	1.2	0.5
B-1 10-15'	06/06/2011	MA DEP EPH	BRL	0.62	BRL	0.62	BRL	0.62	BRL	0.62	BRL	0.62	BRL	0.62
B-2 1-5'	06/06/2011	MA DEP EPH	6.1	0.54	4.1	0.54	**6.1**	0.54	3.9	0.54	**1.0**	0.54	3.5	0.54
B-2 10-15'	06/06/2011	MA DEP EPH	0.59	0.56	BRL	0.56	0.64	0.56	BRL	0.56	BRL	0.56	BRL	0.56
B-3 5-10'	06/06/2011	MA DEP EPH	BRL	0.6	BRL	0.6	BRL	0.6	BRL	0.6	BRL	0.6	BRL	0.6
B-4 12-15'	06/06/2011	MA DEP EPH	BRL	0.58	BRL	0.58	BRL	0.58	BRL	0.58	BRL	0.58	BRL	0.58
B-4 2-5'	06/06/2011	MA DEP EPH	**8.7**	2.8	8.1	2.8	**9.8**	2.8	6.0	2.8	BRL	2.8	5.8	2.8
B-5 10-15'	06/06/2011	MA DEP EPH	BRL	0.63	BRL	0.63	BRL	0.63	BRL	0.63	BRL	0.63	BRL	0.63
B-8 0-3'	09/01/2011	EPA 8270C	BRL	0.22	BRL	0.22	BRL	0.30	BRL	0.30	BRL	0.22	BRL	0.30
B-8 5-10'	09/01/2011	EPA 8270C	**7.8**	0.25	3.3	0.25	**6.5**	0.34	4.9	0.34	**1.2**	0.25	4.2	0.34
B-9 0-3'	09/01/2011	EPA 8270C/VOCs 5035	4.4	0.21	1.7	0.21	**3.5**	0.29	2.9	0.29	0.58	0.21	2.5	0.29
B-10 0-3'	09/01/2011	EPA 8270C	6.4	0.23	2.5	0.23	**5.0**	0.30	4.1	0.30	**1.0**	0.23	3.6	0.30
B-11 0-3'	09/01/2011	EPA 8270C	0.74	0.21	0.30	0.21	0.63	0.28	0.51	0.28	BRL	0.21	0.43	0.28
B-12 0-3'	09/01/2011	EPA 8270C	0.84	0.23	0.32	0.23	0.65	0.31	0.53	0.31	BRL	0.23	0.46	0.31
B-13 0-3'	09/01/2011	EPA 8270C	6.5	0.22	2.6	0.22	**5.0**	0.30	3.7	0.30	**0.90**	0.22	3.2	0.30
Enclosed Courtyard Samples														
B-6 0-4'	06/06/2011	MA DEP EPH	4.5	0.52	3.2	0.52	**4.3**	0.52	2.8	0.52	**0.76**	0.52	2.3	0.52
B-7 8-10'	06/06/2011	MA DEP EPH	BRL	0.61	BRL	0.61	BRL	0.61	BRL	0.61	BRL	0.61	BRL	0.61
Selected Soil Standards														
		MA RCS-1	7		70		2		7		0.7		1,000	
		MA RCS-2	40		400		4		40		4		3,000	
		MA S-1/GW-2	7		70		2		7		0.7		1,000	
		MA S-1/GW-3	7		70		2		7		0.7		1,000	
		MA S-2/GW-2	40		400		4		40		4		3,000	
		MA S-2/GW-3	40		400		4		40		4		3,000	
		MADEP Background - Urban Fill	8		4		7		3		1		3	

Notes:

RDL = Reported Detection Limit

BRL = Below Reporting Limit

NA = Not Analyzed

Prepared By: MDW
Reviewed By: EAF
Revision Date: 9/26/2011

TABLE 2.2
SUMMARY OF SOIL ANALYTICAL DATA:
POLYCHLORINATED BIPHENYLS (PCBs)
BOOTT MILLS
130 Foot of John Street, Lowell, MA
(unit, parts per million [ppm], mg/Kg)

Sample Identification	Sample Date	Analytical Method	Aroclor 1248	RDL	Aroclor 1254	RDL	Total PCBs [1]	RDL
Exterior Courtyard Samples								
B-1 1-5'	06/06/2011	EPA 8082	0.57	0.084	0.53	0.084	1.1	
B-1 10-15'	06/06/2011	EPA 8082	BRL	0.1	BRL	0.1	BRL	
B-2 1-5'	06/06/2011	EPA 8082	**20**	4.3	**11**	4.3	**31**	
B-2 10-15'	06/06/2011	EPA 8082	1.8	0.046	**2.3**	0.46	**4.1**	
B-3 5-10'	06/06/2011	EPA 8082	BRL	0.097	BRL	0.097	BRL	
B-4 2-5'	06/06/2011	EPA 8082	**60**	9	**64**	9	**124**	
B-4 12-15'	06/06/2011	EPA 8082	BRL	0.095	BRL	0.095	BRL	
B-5 10-15'	06/06/2011	EPA 8082	BRL	0.1	BRL	0.1	BRL	
B-8 0-1'	09/01/2011	EPA 8082	0.119	0.0342	0.149	0.0342	0.268	
B-8 1-3'	09/01/2011	EPA 8082	BRL	0.0381	BRL	0.0381	BRL	
B-8 0-3'	09/01/2011	EPA 8082	BRL	0.04	0.0699	0.04	0.0699	
B-8 5-10'	09/01/2011	EPA 8082	BRL	0.0455	BRL	0.0455	BRL	
B-9 0-1'	09/01/2011	EPA 8082	BRL	0.0364	BRL	0.0364	BRL	
B-9 1-3'	09/01/2011	EPA 8082	4.86	0.719	3.35	0.719	**8.21**	
B-10 0-3'	09/01/2011	EPA 8082	1.05	0.382	2.27	0.382	**3.32**	
B-10 3-6'	09/01/2011	EPA 8082	BRL	0.426	0.691	0.426	0.691	
B-11 0-3'	09/01/2011	EPA 8082	6.14	0.731	5.05	0.731	**11.19**	
B-11 3-6'	09/01/2011	EPA 8082	BRL	0.036	BRL	0.036	BRL	
B-12 0-3'	09/01/2011	EPA 8082	0.0649	0.0371	0.184	0.0371	0.2489	
B-12 3-6'	09/01/2011	EPA 8082	BRL	0.0368	BRL	0.0368	BRL	
B-13 0-3'	09/01/2011	EPA 8082	BRL	0.0383	BRL	0.0383	BRL	
B-13 3-6'	09/01/2011	EPA 8082	BRL	0.0368	BRL	0.0368	BRL	
Enclosed Courtyard Samples								
B-6 0-4'	06/06/2011	EPA 8082	BRL	0.082	BRL	0.082	BRL	
B-7 8-10'	06/06/2011	EPA 8082	BRL	0.096	BRL	0.096	BRL	
Selected Soil Standards								
		MA RCS-1	2		2		2	
		MA RCS-2	3		3		3	
		MA S-1/GW-2					2	
		MA S-1/GW-3					2	
		MA S-2/GW-2					3	
		MA S-2/GW-3					3	
		Upper Concentration Limits					100	

Notes:

RDL = Reported Detection Limit

BRL = Below Reporting Limit

NA = Not Analyzed

Bold = Exceeds One or More Selected Standards

[1] - The result for Polychlorinated Biphenyls (PCBs) is calculated as the sum of all quantified values for all analyzed Aroclor analytes.

Prepared By: MDW
Reviewd By: EAF
Revision Date: 9/26/2011

Goldman Environmental Consultants, Inc.

TABLE 2.3
SUMMARY OF SOIL ANALYTICAL DATA:
TOTAL TRACE METALS
BOOTT MILLS
130 Foot of John Street, Lowell, MA
(unit, parts per million [ppm], mg/Kg)

Sample Identification	Sample Date	Analytical Method	Antimony, Total	RDL	Arsenic, Total	RDL	Barium, Total	RDL	Beryllium, Total	RDL	Cadmium, Total	RDL	Chromium, Total	RDL
Exterior Courtyard Samples														
B-1 1-5'	06/06/2011	EPA 6010B/7471A	2.6	1.1	5	3.2	54	5.3	BRL	0.32	0.65	0.53	14	1.1
B-1 10-15'	06/06/2011	EPA 6010B/7471A	BRL	1.3	BRL	3.9	28	6.5	BRL	0.39	BRL	0.65	12	1.3
B-2 1-5'	06/06/2011	EPA 6010B/7471A	3.4	1.1	4.2	3.3	73	5.5	BRL	0.33	BRL	0.55	15	1.1
B-2 10-15'	06/06/2011	EPA 6010B/7471A	4	1.1	BRL	3.4	91	5.7	BRL	0.34	1.3	0.57	38	1.1
B-3 5-10'	06/06/2011	EPA 6010B/7471A	2.8	1.2	6.2	3.6	33	5.9	BRL	0.36	0.63	0.59	18	1.2
B-4 2-5'	06/06/2011	EPA 6010B/7471A	3.6	1.2	6.3	3.5	410	5.8	BRL	0.35	0.94	0.58	20	1.2
B-4 12-15'	06/06/2011	EPA 6010B/7471A	BRL	1.2	BRL	3.5	25	5.8	BRL	0.35	BRL	0.58	8.6	1.2
B-5 10-15'	06/06/2011	EPA 6010B/7471A	3.8	1.3	BRL	3.9	35	6.6	BRL	0.39	BRL	0.66	13	1.3
B-8 0-3'	09/01/2011	EPA 6010B/7471A	BRL	2.2	5.4	0.43	65	0.43	0.48	0.22	BRL	0.43	29	0.43
B-8 5-10'	09/01/2011	EPA 6010B/7471A	BRL	2.5	2.7	0.5	32	0.5	0.51	0.25	BRL	0.5	10	0.5
B-9 0-3'	09/01/2011	EPA 6010B/7471A	BRL	2	6.7	0.41	37	0.41	0.27	0.2	BRL	0.41	**48**	0.41
B-10 0-3'	09/01/2011	EPA 6010B/7471A	BRL	2.3	6.6	0.46	74	0.46	0.48	0.23	BRL	0.46	19	0.46
B-11 0-3'	09/01/2011	EPA 6010B/7471A	BRL	2.1	3.6	0.41	110	0.41	0.4	0.21	BRL	0.41	22	0.41
B-12 0-3'	09/01/2011	EPA 6010B/7471A	BRL	2.2	9.1	0.45	110	0.45	0.48	0.22	BRL	0.45	34	0.45
B-13 0-3'	09/01/2011	EPA 6010B/7471A	BRL	4.4	7.8	0.87	97	0.87	0.46	0.44	BRL	0.87	19	0.87
Enclosed Courtyard Samples														
B-6 0-4'	06/06/2011	EPA 6010B/7471A	4.6	1.3	5.6	3.8	110	6.4	BRL	0.38	0.97	0.64	20	1.3
B-6 4-6'	6/06/2011 *	EPA 6010B	NA		NA		NA		NA		NA		NA	
B-6A 0-2'	09/13/2011	EPA 6010B	NA		NA		NA		NA		NA		NA	
B-6B 0-4'	09/13/2011	EPA 6010B	NA		NA		NA		NA		NA		NA	
B-6C 0-4'	09/13/2011	EPA 6010B	NA		NA		NA		NA		NA		NA	
B-7 8-10'	06/06/2011	EPA 6010B/7471A	BRL	1.3	BRL	3.8	20	6.3	BRL	0.38	BRL	0.63	10	1.3
Selected Soil Standards														
		MA RCS-1	20		20		1,000		100		2		30	
		MA RCS-2	30		20		3,000		200		30		200	
		MA S-1/GW-2	20		20		1,000		100		2		30	
		MA S-1/GW-3	20		20		1,000		100		2		30	
		MA S-2/GW-2	30		20		3,000		200		30		200	
		MA S-2/GW-3	30		20		3,000		200		30		200	
		MADEP Background - Urban Fill	7		20		50		0.9		3		40	

Notes:

RDL = Reported Detection Limit

BRL = Below Reporting Limit

NA = Not Analyzed

Bold = Exceeds One or More Selected Standards

* Chain of custody lists sample date as 9/14/2011. Sample was collected on 6/6/2011, and submitted to the lab on 9/14/2011.

Prepared By: MDW
Reviewed By: EAF
Revision Date: 9/26/2011

TABLE 2.3
SUMMARY OF SOIL ANALYTICAL DATA:
TOTAL TRACE METALS
BOOTT MILLS
130 Foot of John Street, Lowell, MA
(unit, parts per million [ppm], mg/Kg)

Sample Identification	Sample Date	Analytical Method	Lead, Total	RDL	Mercury, Total	RDL	Nickel, Total	RDL	Vanadium, Total	RDL	Zinc, Total	RDL
Exterior Courtyard Samples												
B-1 1-5'	06/06/2011	EPA 6010B/7471A	95	5.3	0.15	0.017	10	5.3	16	1.1	66	5.3
B-1 10-15'	06/06/2011	EPA 6010B/7471A	BRL	6.5	BRL	0.021	7.2	6.5	24	1.3	35	6.5
B-2 1-5'	06/06/2011	EPA 6010B/7471A	290	5.5	0.34	0.019	11	5.5	25	1.1	68	5.5
B-2 10-15'	06/06/2011	EPA 6010B/7471A	590	5.7	0.39	0.02	22	5.7	47	1.1	140	5.7
B-3 5-10'	06/06/2011	EPA 6010B/7471A	17	5.9	0.061	0.021	13	5.9	24	1.2	37	5.9
B-4 2-5'	06/06/2011	EPA 6010B/7471A	530	5.8	2.5	0.19	14	5.8	28	1.2	220	5.8
B-4 12-15'	06/06/2011	EPA 6010B/7471A	BRL	5.8	BRL	0.02	6.2	5.8	16	1.2	33	5.8
B-5 10-15'	06/06/2011	EPA 6010B/7471A	6.6	6.6	BRL	0.022	8.7	6.6	24	1.3	41	6.6
B-8 0-3'	09/01/2011	EPA 6010B/7471A	170	2.2	0.24	0.09	22	1.1	20	0.43	74	2.2
B-8 5-10'	09/01/2011	EPA 6010B/7471A	5.1	2.5	BRL	0.11	6.4	1.3	13	0.5	32	2.5
B-9 0-3'	09/01/2011	EPA 6010B/7471A	90	2	0.32	0.09	**48**	1	28	0.41	43	2
B-10 0-3'	09/01/2011	EPA 6010B/7471A	**1,400**	2.3	0.35	0.09	17	1.2	20	0.46	100	2.3
B-11 0-3'	09/01/2011	EPA 6010B/7471A	**1,800**	2.1	0.79	0.08	26	1	20	0.41	170	2.1
B-12 0-3'	09/01/2011	EPA 6010B/7471A	**620**	2.2	0.28	0.1	**41**	1.1	27	0.45	130	2.2
B-13 0-3'	09/01/2011	EPA 6010B/7471A	110	4.4	0.64	0.1	20	2.2	19	0.87	95	4.4
Enclosed Courtyard Samples												
B-6 0-4'	06/06/2011	EPA 6010B/7471A	**900**	6.4	0.69	0.021	13	6.4	23	1.3	220	6.4
B-6 4-6'	6/06/2011 *	EPA 6010B	110	1.1	NA		NA		NA		NA	
B-6A 0-2'	09/13/2011	EPA 6010B	**930**	0.79	NA		NA		NA		NA	
B-6B 0-4'	09/13/2011	EPA 6010B	310	0.86	NA		NA		NA		NA	
B-6C 0-4'	09/13/2011	EPA 6010B	390	1.1	NA		NA		NA		NA	
B-7 8-10'	06/06/2011	EPA 6010B/7471A	6.9	6.3	BRL	0.021	6.9	6.3	18	1.3	35	6.3
Selected Soil Standards												
MA RCS-1			300		20		20		600		2,500	
MA RCS-2			300		30		700		1,000		3,000	
MA S-1/GW-2			300		20		20		600		2,500	
MA S-1/GW-3			300		20		20		600		2,500	
MA S-2/GW-2			300		30		700		1,000		3,000	
MA S-2/GW-3			300		30		700		1,000		3,000	
MADEP Background - Urban Fill			600		1		30		30		300	

Notes:

RDL = Reported Detection Limit

BRL = Below Reporting Limit

NA = Not Analyzed

Bold = Exceeds One or More Selected Standards

* Chain of custody lists sample date as 9/14/2011. Sample was collected on 6/6/2011, and submitted to the lab on 9/14/2011.

Prepared By: MDW
Reviewed By: EAF
Revision Date: 9/26/2011

TABLE 3.1
RAM SOIL SAMPLING PLAN: EASTERN COURTYARD
Boott Mills
130 John Street, Lowell, MA

Boring	Depth Interval (Feet)	PCBs (EPA 8082)	Lead (EPA 6010)	Chromium (EPA 6010)	Nickel (EPA 6010)
B-15	0-3	X			
	3-5	X			
	5-7	X			
B-16	0-3		X	X	X
	3-5		X	X	X
	5-7	X			
	7-9	X			
B-17	0-3	X	X	X	X
	3-5	X	X	X	X
	5-7	X	X		
B-20	3-5	X			
	5-7	X			
B-21	0-3	X	X	X	X
	3-5	X	X	X	X
	5-7	X			
B-22	0-3		X		
	3-5	X	X		
	5-7	X			
B-23	0-3	X	X		
	3-5	X	X		
B-25	0-3	X			
	3-5	X			
	5-7	X			
B-26	5-7	X			
	7-9	X			
B-27	0-3	X			
	3-5	X			
	5-7	X			
B-28	0-3	X			
	3-5	X			
	5-7	X			
B-29	0-3	X			
	3-5	X			
	5-7	X			
B-30	0-3	X	X		
	3-5	X	X		
B-31	0-3	X	X		
	3-5	X	X		
B-32	0-3	X	X		
	3-5	X	X		
B-33	0-3		X		
	3-5		X		
B-34	0-3		X		X
	3-5		X		X
	TOTAL	47	24	6	14

Prepared By: MDW
Date: 8/1/2012

TABLE 3.2
RAM SOIL SAMPLING PLAN: WESTERN COURTYARD
Boott Mills
130 John Street, Lowell, MA

Boring	Depth Interval (Feet)	PCBs (EPA 8082)	Lead (EPA 6010)	PAHs (EPA 8270C)	VOCs (8260B)
B-6D	0-4		X		
	4-6		X		
B-6E	0-4		X		
	4-6		X		
	TOTAL		17		

ATTACHMENTS

Goldman
Environmental
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60 Brooks Drive
Braintree, MA 02184

781-356-9140
Fax 781-356-9147
www.goldmanenvironmental.com

August 2, 2012

Mayor Patrick Murphy
City of Lowell Mayor's Office
Lowell City Hall
375 Merrimack Street
Lowell, Massachusetts 01852

RE: Release Abatement Measure Plan
130 Foot of John Street
Lowell, Massachusetts
RTN 3-26688

Dear Mayor Patrick Murphy,

On behalf of Boott Properties, LLC, the current owner of the above-referenced property, Goldman Environmental Consultants, Inc. (GEC) is notifying you, in accordance with 310 CMR 40.1403(3)(d) regarding the planned implementation of a Release Abatement Measure (RAM). The RAM has three general objectives: (1) conduct additional subsurface investigations within the eastern courtyard of the Site to address data gaps and more accurately determine the horizontal and vertical extent of PCB and lead contamination (2) conduct soil removal activities, if appropriate, to reduce the concentration of PCB and lead in soils to applicable MCP and TSCA standards; and (3) properly dispose of contaminated soils in accordance with applicable state and federal requirements.

A copy of the RAM Plan can be obtained from the Northeast Regional office of the Massachusetts Department of Environmental Protection (MADEP) located at 205B Lowell Street in Wilmington, MA. The RAM will be initiated no sooner than 30 days after the submittal date recorded by MADEP, so no sooner than September 1, 2012. Work associated with the RAM is expected to finish within approximately 90 days thereafter.

Should you have any questions regarding this matter, please do not hesitate to contact GEC at (781) 356-9140.

Respectfully submitted,
Goldman Environmental Consultants, Inc.

Matthew Wilson
Assistant Project Manager

cc: MADEP, NERO

Goldman
Environmental
Consultants, Inc.

60 Brooks Drive
Braintree, MA 02184

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August 2, 2012

Mr. Frank Singleton, Director
City of Lowell Board of Health
341 Pine Street
Lowell, Massachusetts 01851

RE: Release Abatement Measure Plan
130 Foot of John Street
Lowell, Massachusetts
RTN 3-26688

Dear Mr. Singleton,

On behalf of Boott Properties, LLC, the current owner of the above-referenced property, Goldman Environmental Consultants, Inc. (GEC) is notifying you, in accordance with 310 CMR 40.1403(3)(d) regarding the planned implementation of a Release Abatement Measure (RAM). The RAM has three general objectives: (1) conduct additional subsurface investigations within the eastern courtyard of the Site to address data gaps and more accurately determine the horizontal and vertical extent of PCB and lead contamination (2) conduct soil removal activities, if appropriate, to reduce the concentration of PCB and lead in soils to applicable MCP and TSCA standards; and (3) properly dispose of contaminated soils in accordance with applicable state and federal requirements.

A copy of the RAM Plan can be obtained from the Northeast Regional office of the Massachusetts Department of Environmental Protection (MADEP) located at 205B Lowell Street in Wilmington, MA. The RAM will be initiated no sooner than 30 days after the submittal date recorded by MADEP, so no sooner than September 1, 2012. Work associated with the RAM is expected to finish within approximately 90 days thereafter.

Should you have any questions regarding this matter, please do not hesitate to contact GEC at (781) 356-9140.

Respectfully submitted,
Goldman Environmental Consultants, Inc.

Matthew Wilson
Assistant Project Manager

cc: MADEP, NERO